Why Future Combat Systems

Governor George W. Bush
The Citadel
Charleston, South Carolina
23 Sep 99

"Our forces in the next century must be agile, lethal, readily deployable, and require a minimum of logistical support. We must be able to project our power over long distances, in days or weeks rather than months ...

"On land, our heavy forces must be lighter. Our light forces must be more lethal. All must be easier to deploy. And these forces must be organized in smaller, more agile formations, rather than cumbersome divisions."

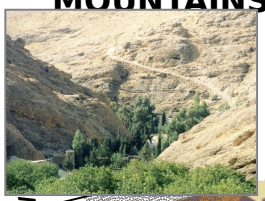
<u>This was important in 1999- it is even more important today...</u>

Where We Will Operate and Who We Will Face

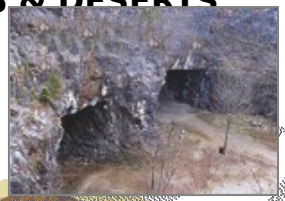
Adversaries have "gone to school" on U.S. operations

STRATEGIC DEPLOYMENTS…
LONG LOGISTICS TRAIL

EXTENDED DISTANCES > 600 KM



MOUNTAINS & DESERTS

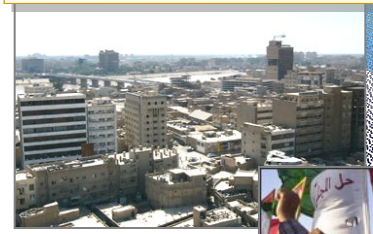


JUNGLES & DENSE FORESTS

POOR INFRASTRUCTURE

THREATS WILL SEEK:

- **Strategic Preclusion** to keep the US at a distance and erode US influence and political will
- **Operational Exclusion** to keep US outside operational distance by land, sea, and air using all available technology (e.g. WMD) and a myriad of partnerships
- **Tactical Access Denial** to limit where we operate by blending into populations in urban areas while challenging our access to hard-stands, landing zones, ports, airfields, sea coasts, and waterways



CITIES

COMPLEX DEMOGRAPHICS

FUTURE OPERATING ENVIRONMENT COMPLEXITY

- **Terrain** – Far from the US, Vast Areas with Extended Borders or Under-Governed Regions, Natural Disasters; Poor Infrastructure with Inadequate Sewer, Water, Electrical and Medical Facilities; Under-developed Road and Telecommunications Networks
- **Human** – Cultural, Ethnic, Religious, Tribal, and Political Factions
- **Informational** – Economic, Technological, Religious,

Implementing Strategic Guidance

National Defense Strategy

Force capabilities include:

"Projecting and sustaining forces in distance anti-access environments"

National Military Strategy (Attributes)

- Integrated
- Expeditionary
- Networked
- Decentralized
- Adaptable
- Decision Superior
- Lethal

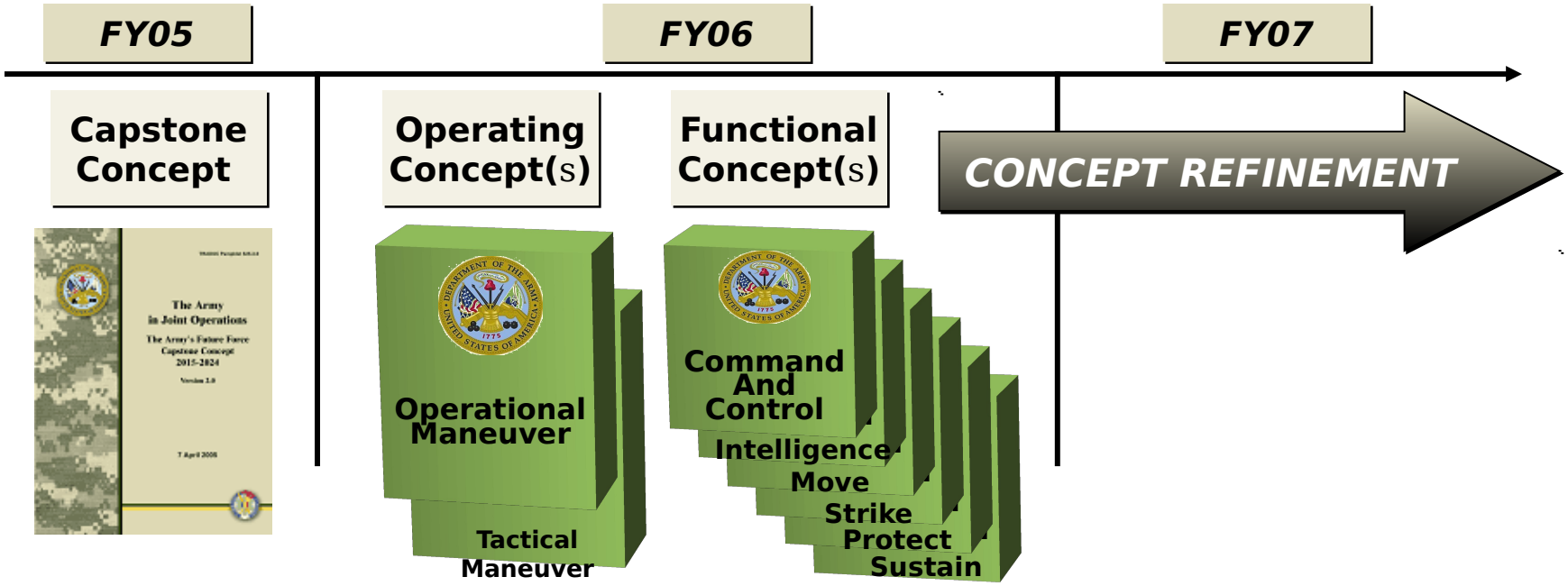
Quadrennial Defense Review 2006

- Enhance multipurpose force capabilities for irregular warfare
- Continuous modernization
- Operational maneuver and sustainment of ground forces at strategic distances
- Expand Army multipurpose capacity
- Exploit Reachback
- Increase time-sensitive operations capabilities
- Accelerate FCS spin-outs

Strategic Planning Guidance

- Priorize to achieve QDR 2006 future force vision
- Large-scale, long duration irregular warfare
  - Multiple globally distributed operations
  - Highly distributed, parallel operations
- Develop full-spectrum FCS capabilities
- Priority to develop and field spirals of advanced FCS capabilities

Army Concepts Way Ahead



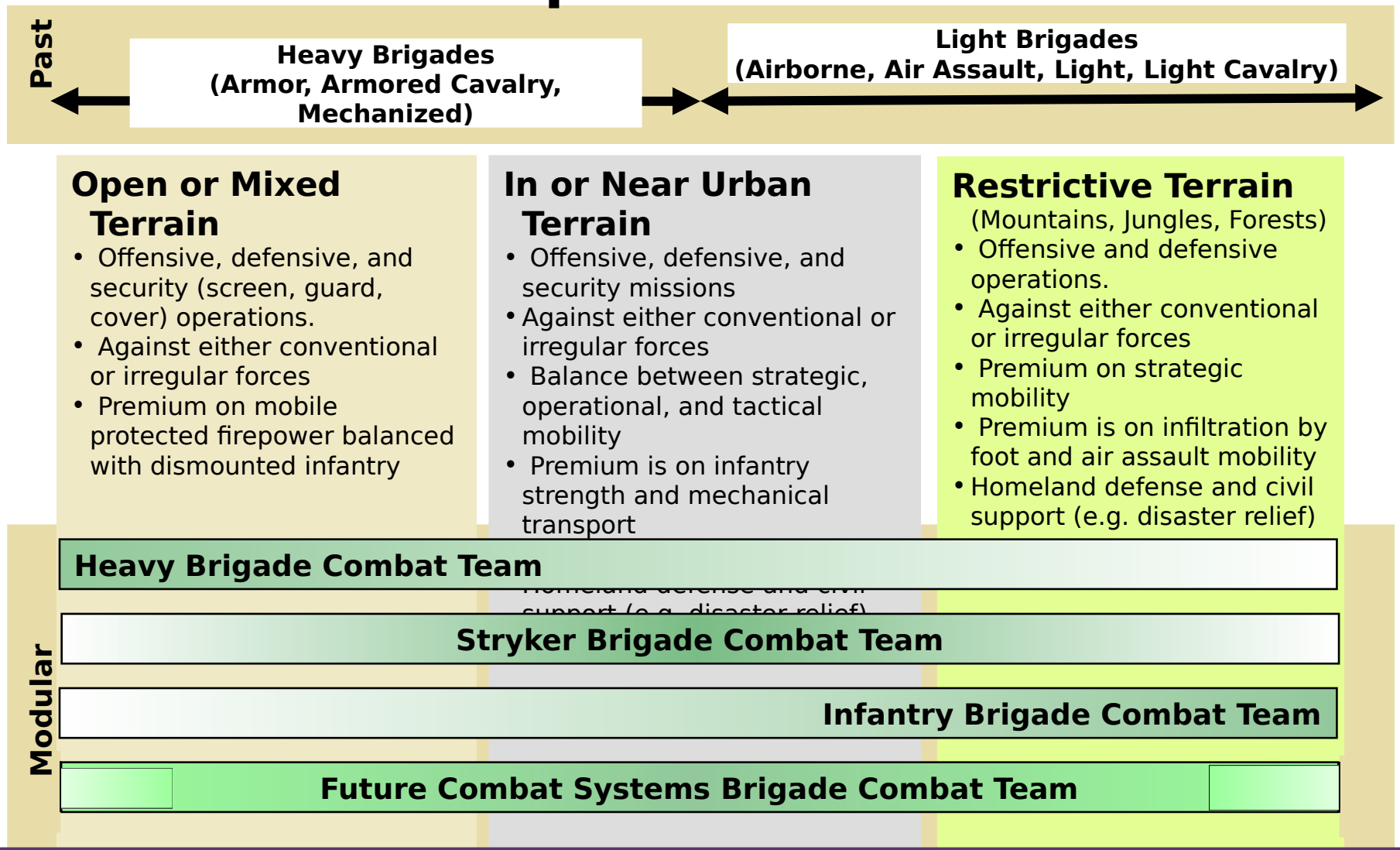
- Capstone Concept intended for experimentation and subordinate concept development
- Operating and Functional Concepts are further elaboration of Capstone Concept key ideas
- Concept Capability Plans (CCPs) enable capability development as envisioned in operational concepts
- Army concepts – nested and support the family of Capstone Concept for Joint Operations (CCJO)

Wargaming and Experimentation

Concept-Capabilities Gap Analysis

A comprehensive set of operational concepts covers all warfighting functions and missions.

The Modular Force in Full-Spectrum Operations


Past
Heavy Brigades
(Armor, Armored Cavalry, Mechanized)
Light Brigades
(Airborne, Air Assault, Light, Light Cavalry)
Open or Mixed Terrain
• Offensive, defensive, and security (screen, guard, cover) operations.
• Against either conventional or irregular forces
• Premium on mobile protected firepower balanced with dismounted infantry
In or Near Urban Terrain
• Offensive, defensive, and security missions
• Against either conventional or irregular forces
• Balance between strategic, operational, and tactical mobility
• Premium is on infantry strength and mechanical transport
Restrictive Terrain
(Mountains, Jungles, Forests)
• Offensive and defensive operations.
• Against either conventional or irregular forces
• Premium on strategic mobility
• Premium is on infiltration by foot and air assault mobility
• Homeland defense and civil support (e.g. disaster relief)
Modular
Heavy Brigade Combat Team
Stryker Brigade Combat Team
Infantry Brigade Combat Team
Future Combat Systems Brigade Combat Team

All modular BCTs have utility in stability and reconstruction operations

Continue to Upgrade Existing Capabilities?
Or Develop New Capabilities?

1982 Chevrolet

How Much Would it Cost to Upgrade?

Who Would be Willing to Pay the Price vs. Buying New?

2006 Chevrolet

Safety Features

- 3-point shoulder harness

- 3-point shoulder harness
- Driver/Passenger Airbags
- Electronic Stability Control
- On-Star Automatic Crash Notification
- Energy absorbing crumple zones
- Four wheel disc brakes w/ ABS

Mechanical

- 3 Speed Automatic Transmission
- Rear Wheel Drive

- Computer Controlled Engine and Transmission
- Independent Suspension
- Front Wheel Drive

Comfort/Convenience

- Limited Basic

- On-Star Satellite Positioning and Hands-Free Telephone
- Power Windows, Door Locks, Seats
- 12V Power Plugs

Maintenance

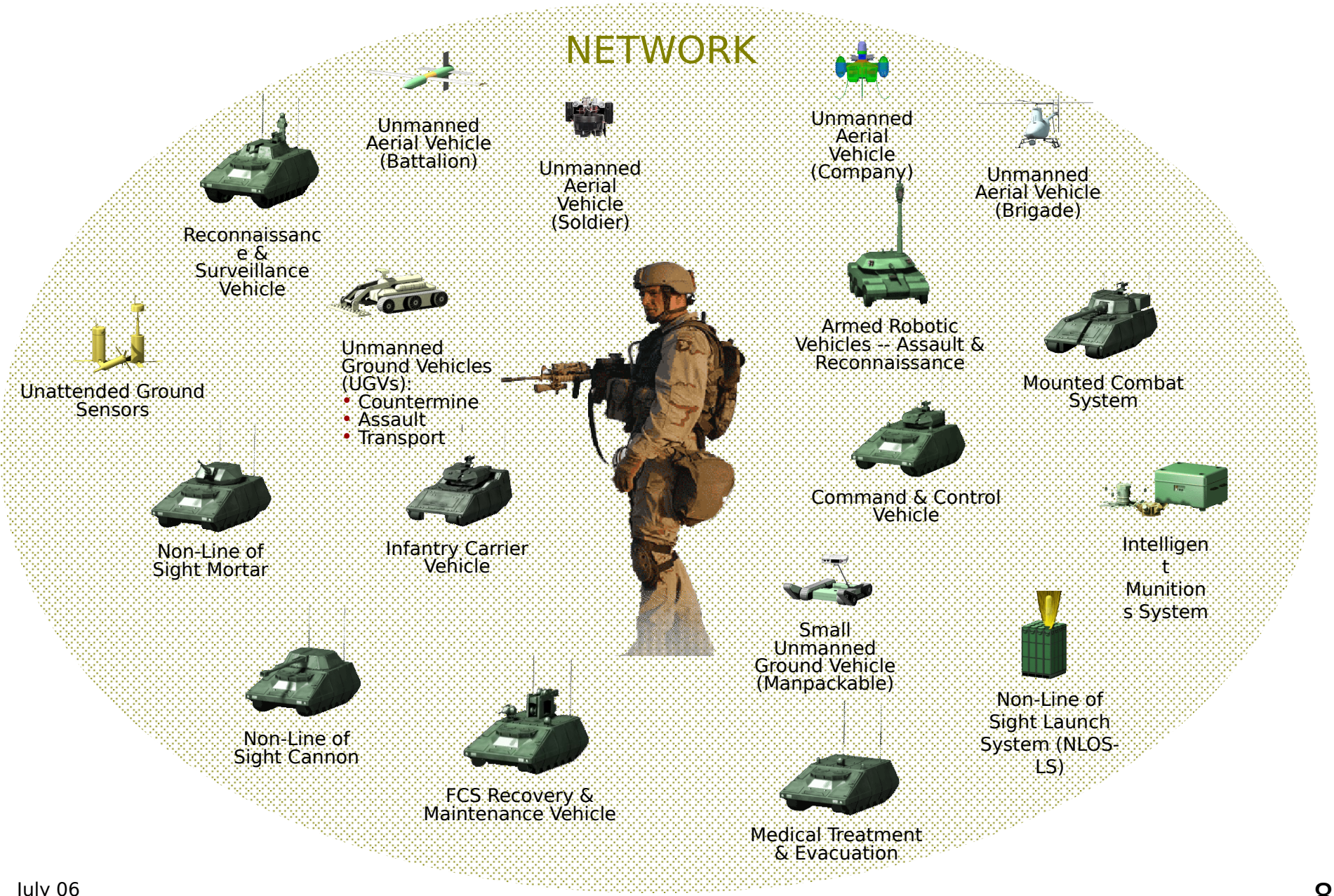
- Tune-ups Recommended every 10K
- Manual Troubleshooting

- Tune-ups Recommended every 100K
- Built-in Diagnostics with Fault Code Storage

Army Modernization Centers on FCS Capabilities

- **Improves capabilities to “find and fix” the enemy down to the individual level while maintaining the capability to “finish” targets**
- **Invests in capabilities to hedge against the possibility that a large, technologically adept country may gain the ability to disrupt or negate U.S. military advantages**
- **Explores opportunities to develop and field advanced FCS capabilities applicable for irregular warfare and the War on Terror environments**
- **Develops discrete capabilities that find and engage non-state actors attempting to develop and employ asymmetric capabilities**
- **FCS BCTs and spin outs improve the capacity of general purpose forces to conduct highly distributed, parallel irregular warfare operations- Combatant Commander’s benefit from full**

FCS BCT


NETWORK
Unmanned Aerial Vehicle (Battalion)
Unmanned Aerial Vehicle (Soldier)
Unmanned Aerial Vehicle (Company)
Unmanned Aerial Vehicle (Brigade)
Reconnaissance & Surveillance Vehicle
Unattended Ground Sensors
Unmanned Ground Vehicles (UGVs):
• Countermine
• Assault
• Transport
Armed Robotic Vehicles -- Assault & Reconnaissance
Mounted Combat System
Command & Control Vehicle
Intelligent Munitions System
Non-Line of Sight Mortar
Infantry Carrier Vehicle
Small Unmanned Ground Vehicle (Manpackable)
Non-Line of Sight Launch System (NLOS-LS)
Non-Line of Sight Cannon
FCS Recovery & Maintenance Vehicle
Medical Treatment & Evacuation

Strategy for Spiraling FCS Technologies to Current Force

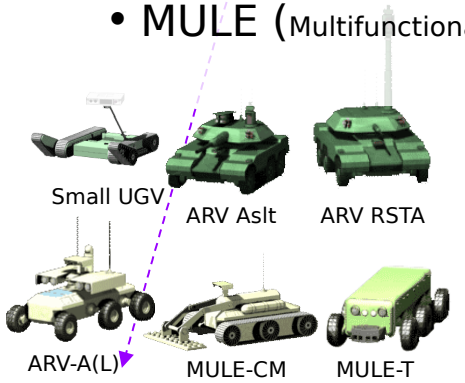
SPIN OUTS

FCS

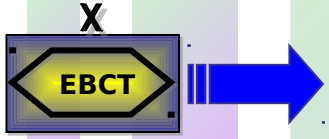
Spin Out 1 (FY08):
Sensors / Shooters
+ Network & Soldier
+ Unattended ground sensors
+ Non-line of sight launch systems
+ Intelligent munitions

Spin Out 2 (FY10):
Unmanned Aerial Vehicles
+ Network & Soldier
+ Sensors

Spin Out 3 (FY12):
Unmanned Ground Vehicles
- Network & Soldier
- SUGV
- ARV (Armed Robotic Vehicle Aslt & RSTA)
- MULE (Multifunctional Utility/Logistics and Equipment Vehicle)



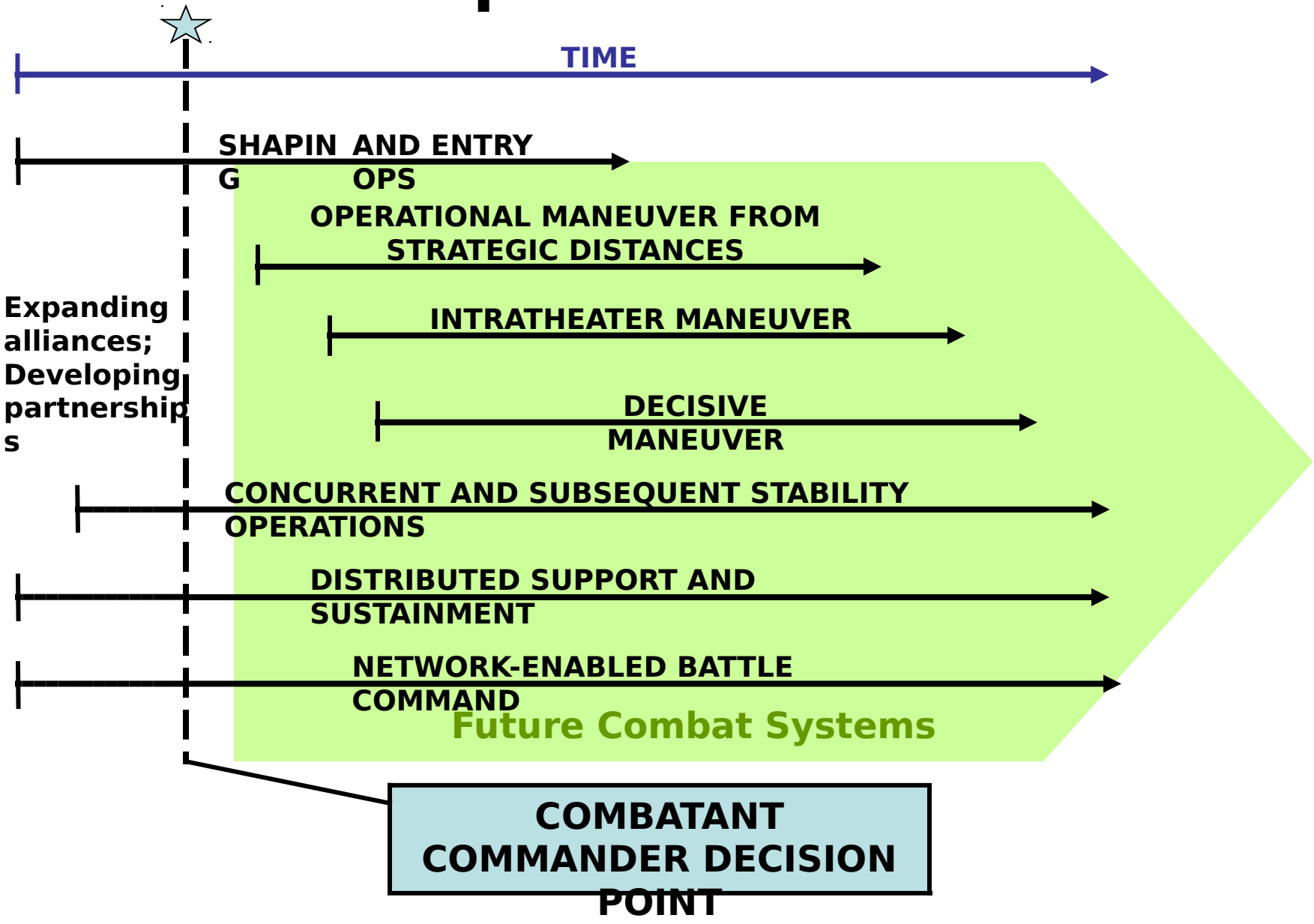
Spin Out 4 (FY14):
Full Network Battle Command Capability



Current Force

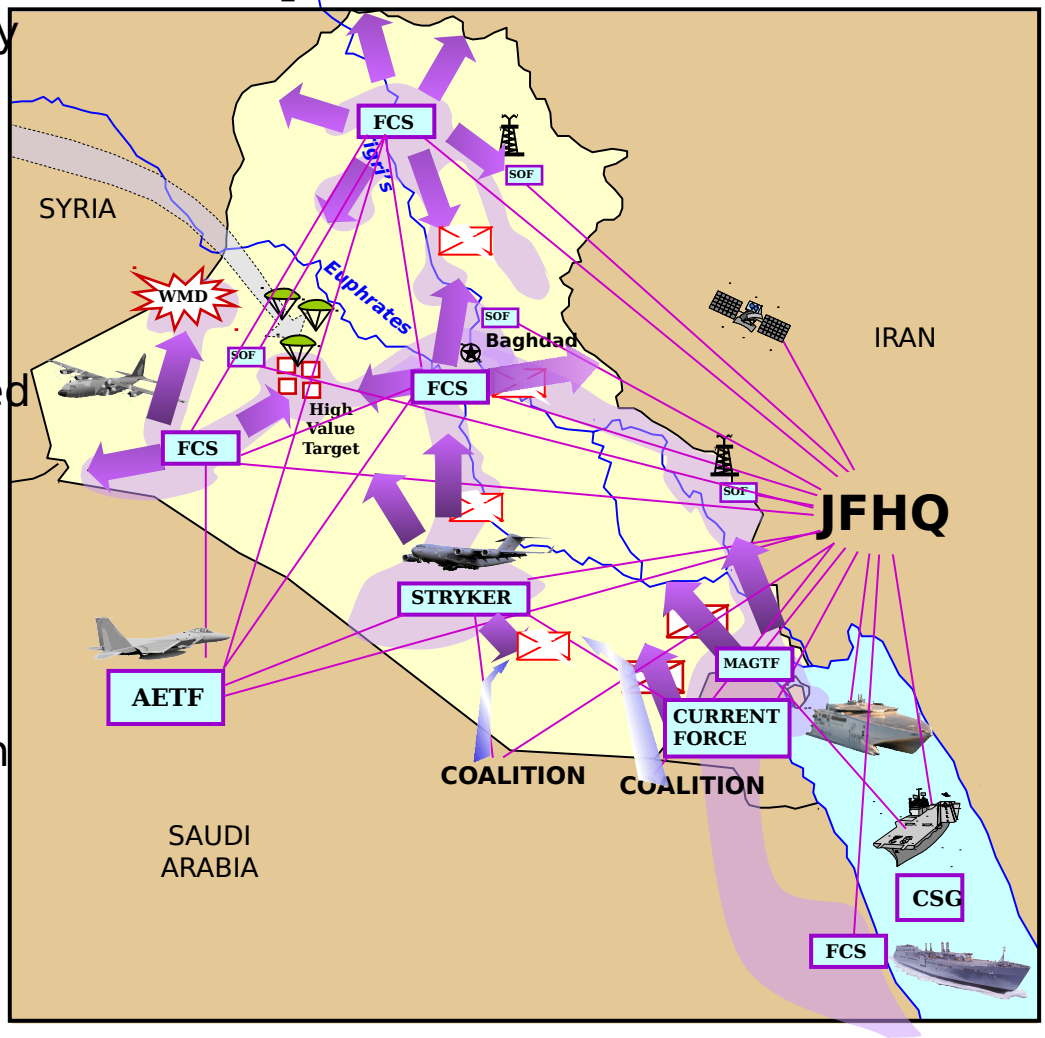
* Enhanced course of action

Key Ideas – The Army In Joint Operations



How 21st Century Land Forces Will Fight
TRADOC PAM 525-3-0
The Army in Joint Operations

- ✓ Counter anti-access with multiple entry points; Avoid reliance on major ports
- ✓ Increase force flow volume; Forces employ on arrival
- ✓ Entire area exposed to mobile formations; Multiple dilemmas for enemy due to simultaneous, distributed operations
- ✓ No operational pauses keeps continuous pressure on enemy; Self-contained units
- ✓ Multi-layered, unmanned ground and air systems; increased force protection
- ✓ Fully networked, interdependent joint force
- ✓ Battle command on the move; more robust staffs deal with full range of military operations
- ✓ High situational awareness to lowest



More options for Joint Force Comman

Range of Complex Environments

Then:

- Urban growth
- Engagements are matters of chance contact
- Intelligence based on estimates
- Red Zone measured in Feet
- Overwhelming Fires to reduce risk
- Immense collateral damage

Now :

- Urban Development
- Engagements are predominantly chance contacts
- Intelligence by limited HUMINT and overhead systems
- Red Zone measured in Meters
- Fires and maneuver to reduce risk
- High collateral damage

Future:

- Urban Sprawl
- Engagements are more predictable
- Intelligence developed by units/multiple sources
- Red Zone identified prior to contact
- Maneuver on confirmed enemy; networked fires
- Reduced collateral damage

Dominate Complex Environments

Need More than Kinetic Solutions

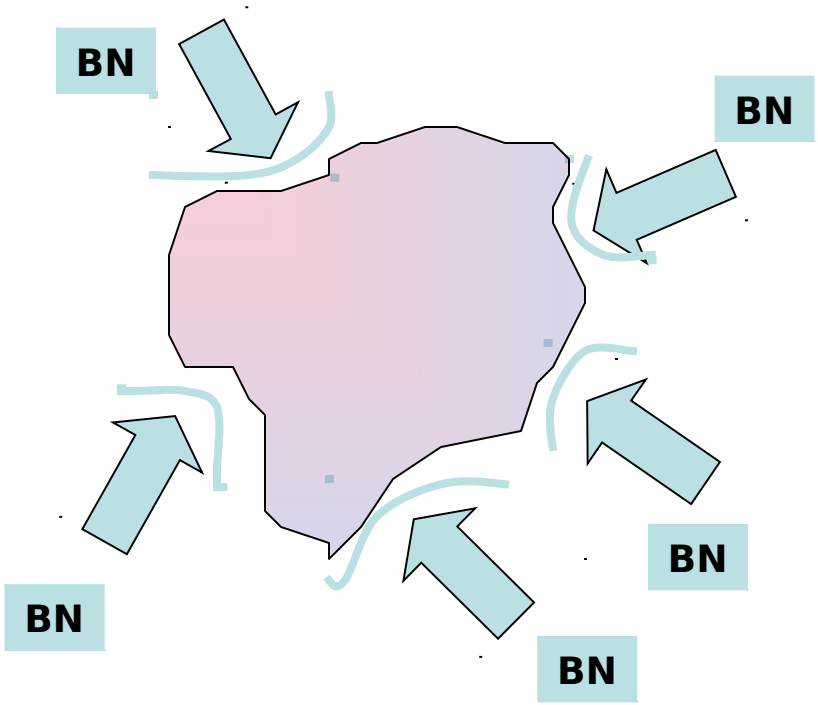
Key Ideas: The Army in Joint Operations

- Operational Maneuver from Strategic Distance
- Entry and Shaping Operations
- Intratheater Operational Maneuver
- Decisive Maneuver
- Concurrent and Subsequent Stability Operations
- Network-Enabled Battle Command
- Distributed Maneuver Support and Sustainment

"The total of the FCS "systems of systems" is much greater than the sum of its parts due to the interlocking and complementary nature of the individual systems. Additionally, all systems, including the Soldier, will be linked by a vast and secure network so that every person and every system is linked to the others." CSA

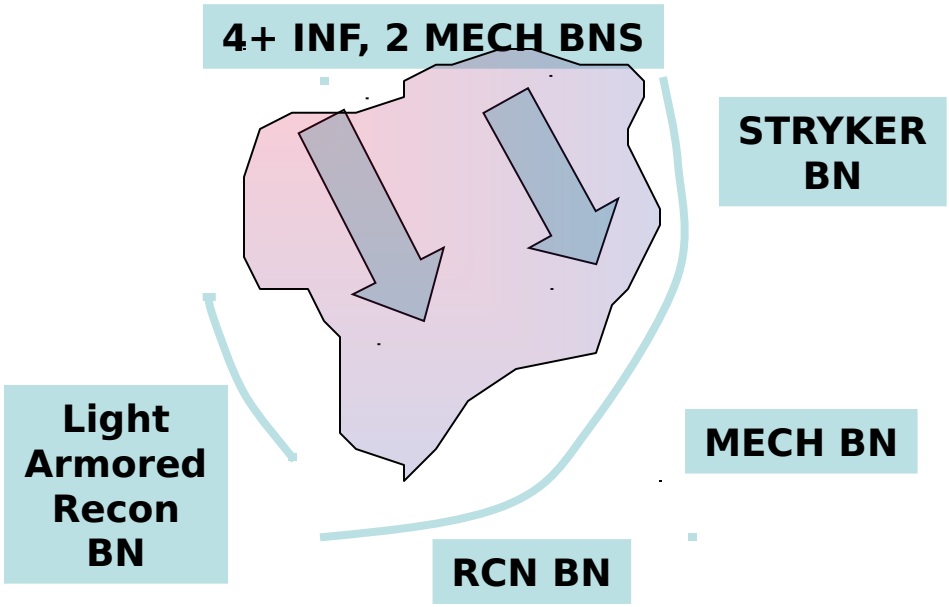
Current Urban Battle

Isolate and Shape
(several weeks)



5 Battalions

Decisive Operations
(1 week assault, 2 weeks clear pockets)

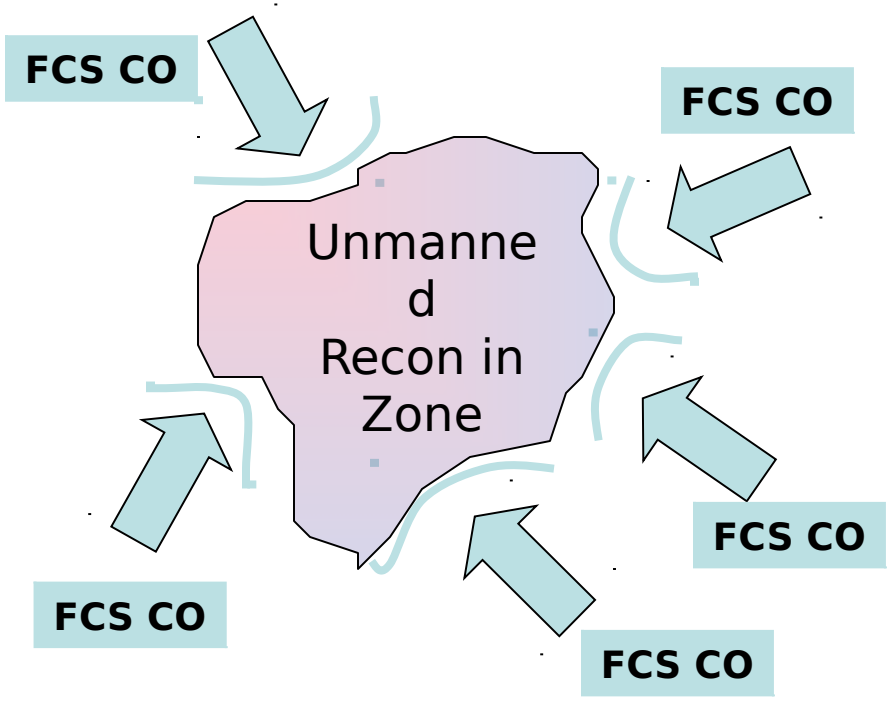


10+ Battalions

Followed by Transition to Civil Affairs Operations

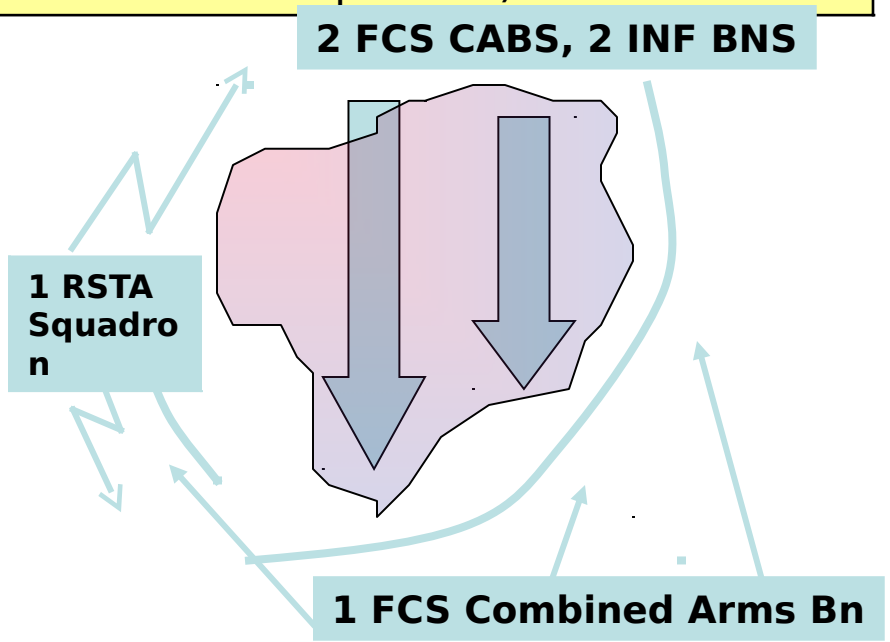
Future Urban Battle

Isolate and Shape
(1-2 weeks)



< 2 Battalions

Decisive Operations
(Several days-assault, 1 week-clear pockets)



5 Battalions

Followed by Transition to Civil Affairs Operations

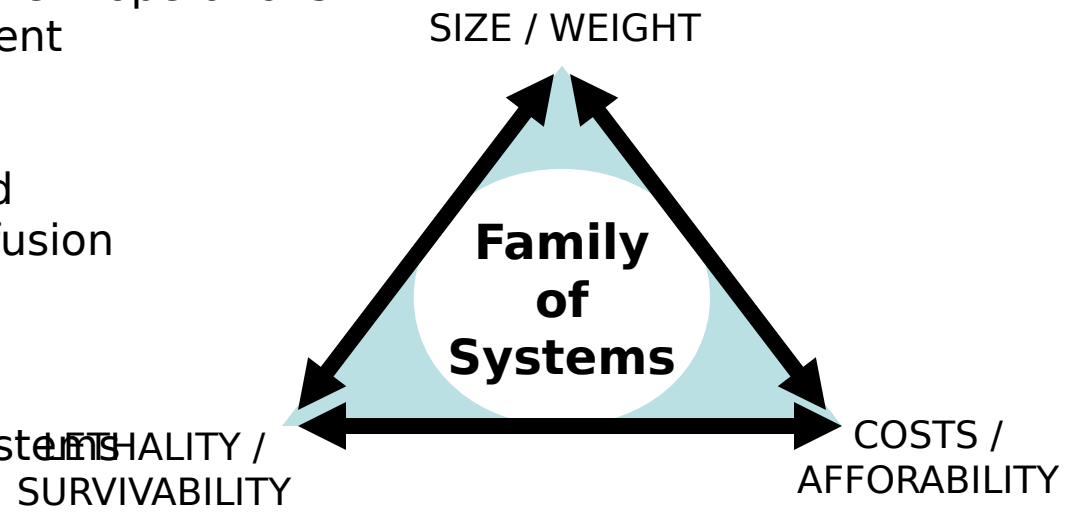
FCS Requirements -- Rumblings and Reali

- Term “requirement” depends on where you sit…
  - Combat Developer: describes what it is we want in a new system -- system attributes, the qualities
  - Acquisition Community: anything that they must consider in developing a new system -- from combat developer "requirements" (aka attributes) to specifications

- The Army has not increased FCS requirements
  - Alert to lessons learned from current operations
  - Emphasizing materiel achievement

- Disciplined Approach
  - Over 150 requirements reviewed
  - Eliminated redundancy and confusion
  - Tempered by the achievable
  - Ongoing risk mitigation

- Balanced Approach for Family of Systems
  - Size / Weight
  - Lethality / Survivability
  - Affordability / Costs



Operational Lessons Learned and Realm of Achievable Drive Refinement of

Myth Vs Reality

Myth: FCS programs has experienced huge cost growths.

Reality: *Major cost estimate increases result from adding back manned and unmanned platforms to complete the original design, and delaying program by four years to focus on current fight. Actual RDT&E cost growth only 6%.*

Myth: FCS manned ground vehicles are not an important part of the FCS vision.

Reality: *FCS manned ground vehicles contain 60 % of the FCS BCT sensors, enabling the see first, understand first and act first concept that is key to future force effectiveness.*

Myth: FCS manned ground vehicles are not survivable.

Reality: *FCS manned ground vehicles designed around survivability, and in most cases much more survivable. FCS BCT shows much better survivability with less casualties, and faster mission accomplishment.*

Myth: FCS is an unaffordable luxury.

Reality: *We cannot afford not to do this necessary modernization. Current platforms not capable of sensor integration required today and essential for the future. Only strategic modernization program to develop replacement for heavy platforms.*

Myth: FCS is designed for the Cold War, and does not meet the needs today and in the future.

Reality: *FCS designed for the full spectrum operations. Will excel in*

What Isn't Changing

The Soldier is the Centerpiece of All Our Units

- ✓ **Everything we do is designed to support the Soldier**
- ✓ **A heritage of fighting and winning our Nation's Wars**
- ✓ **Traditions reflected in our units' lineage and honors**